1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Sodium dodecyl sulfate
Product Number: L3771
Brand: Sigma
CAS-No.: 151-21-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #: (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable solids (Category 2), H228
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Skin irritation (Category 2), H315
Serious eye damage (Category 1), H318
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H228: Flammable solid.
H302 + H332: Harmful if swallowed or if inhaled
H315: Causes skin irritation.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H401: Toxic to aquatic life.
H412: Harmful to aquatic life with long lasting effects.
Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/eye protection/face protection.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
Possible sensitizer.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Synonyms: Lauryl sulfate sodium salt
Sodium dodecyl sulphate
Sodium dodecyl sulfate
Sodium lauryl sulfate
Dodecyl sodium sulfate
Dodecyl sulfate sodium salt
SDS

Formula: \( C_{12}H_{25}NaO_4S \)
Molecular weight: 288.38 g/mol
CAS-No.: 151-21-3
EC-No.: 205-788-1

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>Flam. Sol. 2; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; STOT SE 3; Aquatic Acute 2; Aquatic Chronic 3; H228, H302 + H332, H315, H318, H335, H401, H412</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.
4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.
7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
hygroscopic
Storage class (TRGS 510): Flammable solid hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.
Hazardous components without workplace control parameters

8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance a)</td>
<td>Form: Rods, Colour: white</td>
</tr>
<tr>
<td>Odour b)</td>
<td>odourless</td>
</tr>
<tr>
<td>Odour Threshold c)</td>
<td>No data available</td>
</tr>
<tr>
<td>pH d)</td>
<td>9.1 at 10 g/l</td>
</tr>
<tr>
<td>Melting point/freezing point e)</td>
<td>Melting point/range: 204 - 207 °C (399 - 405 °F) - lit.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range f)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point g)</td>
<td>170 °C (338 °F)</td>
</tr>
<tr>
<td>Evaporation rate h)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas) i)</td>
<td>The substance or mixture is a flammable solid with the category 2.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits j)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure k)</td>
<td>0.0018 hPa (0.0014 mmHg) at 20 °C (68 °F)</td>
</tr>
<tr>
<td>Vapour density l)</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density m)</td>
<td>0.370 g/cm³</td>
</tr>
<tr>
<td>Water solubility n)</td>
<td>soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water o)</td>
<td>log Pow: 0.83 at 22 °C (72 °F)</td>
</tr>
<tr>
<td>Auto-ignition temperature p)</td>
<td>310.5 °C (590.9 °F)</td>
</tr>
<tr>
<td>Decomposition temperature q)</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity r)</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties s)</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties t)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 9.2 Other safety information

- Solubility in other solvents: Ethanol - partly soluble
- Surface tension: 25.2 mN/m at 23 °C (73 °F)
- Dissociation constant: 1.31 at 20 °C (68 °F)

### 10. STABILITY AND REACTIVITY

#### 10.1 Reactivity
No data available
10.2 **Chemical stability**
Stable under recommended storage conditions.

10.3 **Possibility of hazardous reactions**
No data available

10.4 **Conditions to avoid**
Heat, flames and sparks.

10.5 **Incompatible materials**
Oxidizing agents

10.6 **Hazardous decomposition products**
Other decomposition products - No data available
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides, Sodium oxides
In the event of fire: see section 5

11. **TOXICOLOGICAL INFORMATION**

11.1 **Information on toxicological effects**

- **Acute toxicity**
  - LD50 Oral - Rat - male and female - 1,200 mg/kg
  - LC50 Inhalation - Rat - 1 h - > 3,900 mg/m3
  No data available

- **Skin corrosion/irritation**
  Skin - Rabbit
  Result: Skin irritation - 24 h
  (OECD Test Guideline 404)

- **Serious eye damage/eye irritation**
  Eyes - Rabbit
  Result: Risk of serious damage to eyes.
  (OECD Test Guideline 405)

- **Respiratory or skin sensitisation**
  Information given is based on data obtained from similar substances.

- **Germ cell mutagenicity**
  No data available
  Ames test
  S. typhimurium
  Result: negative

- **Carcinogenicity**
  IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
  NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
  OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

- **Reproductive toxicity**
  No data available
  No data available

- **Specific target organ toxicity - single exposure**
  No data available

- **Specific target organ toxicity - repeated exposure**
  No data available
Aspiration hazard
No data available

Additional Information
RTECS: WT1050000

sneezing. The sodium salt of dodecyl sulfate has been reported to cause pulmonary sensitization resulting in hyperactive airway dysfunction and pulmonary allergy accompanied by fatigue, malaise, and aching. Significant symptoms of exposure can persist for more than two years and can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes, and passive smoking. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>flow-through test LC50 - Pimephales promelas (fathead minnow) - 29 mg/l - 96 h (OECD Test Guideline 203)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>LC50 - Daphnia dubia (water flea) - 5.55 mg/l - 48 h</td>
</tr>
<tr>
<td></td>
<td>NOEC - Daphnia dubia (water flea) - 0.684 mg/l - 7 d</td>
</tr>
<tr>
<td>Toxicity to algae</td>
<td>Growth inhibition LOEC - Pseudokirchneriella subcapitata - 2.68 mg/l - 6 d static test EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - &gt; 120 mg/l - 72 h</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

<table>
<thead>
<tr>
<th>Biodegradability</th>
<th>aerobic - Exposure time 28 d Result: 95 % - Readily biodegradable (OECD Test Guideline 301B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio BOD,ThBOD</td>
<td>95.9 %</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Bioaccumulation</th>
<th>Cyprinus carpio (Carp) - 72 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioconcentration factor (BCF):</td>
<td>3.9 - 5.3</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.
14. TRANSPORT INFORMATION

DOT (US)
UN number: 1325       Class: 4.1       Packing group: III
Proper shipping name: Flammable solids, organic, n.o.s. (Sodium dodecyl sulphate)
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG
UN number: 1325       Class: 4.1       Packing group: III       EMS-No: F-A, S-G
Proper shipping name: FLAMMABLE SOLID, ORGANIC, N.O.S. (Sodium dodecyl sulphate)

IATA
UN number: 1325       Class: 4.1       Packing group: III
Proper shipping name: Flammable solid, organic, n.o.s. (Sodium dodecyl sulphate)

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>151-21-3</td>
<td></td>
</tr>
</tbody>
</table>

New Jersey Right To Know Components

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dodecyl sulphate</td>
<td>151-21-3</td>
<td></td>
</tr>
</tbody>
</table>

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.       Acute toxicity
Aquatic Acute   Acute aquatic toxicity
Aquatic Chronic  Chronic aquatic toxicity
Eye Dam.        Serious eye damage
Flam. Sol.       Flammable solids
H228             Flammable solid.
H302             Harmful if swallowed.
H302 + H332      Harmful if swallowed or if inhaled
H315             Causes skin irritation.
H318             Causes serious eye damage.
H332             Harmful if inhaled.
H335             May cause respiratory irritation.
<table>
<thead>
<tr>
<th><strong>HMIS Rating</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazard:</td>
<td>2</td>
</tr>
<tr>
<td>Chronic Health Hazard:</td>
<td>3</td>
</tr>
<tr>
<td>Flammability:</td>
<td>3</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>NFPA Rating</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Health hazard:</td>
<td>2</td>
</tr>
<tr>
<td>Fire Hazard:</td>
<td>3</td>
</tr>
<tr>
<td>Reactivity Hazard:</td>
<td>3</td>
</tr>
</tbody>
</table>

**Further information**
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**Preparation Information**
Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956  

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